WEST COAST
ANALYTICAL
SERVICE, INC.
Analytical Chemists

January 13, 2000

Fred R Rippy, Inc
12471 E Washington Blvd
Whittier, CA 90602-1075

Attn: Fred Rippy

Job No: 45101 DL

LABORATORY REPORT

Samples Received: Two (2) Samples
Date Received: 01/06/2000
Purchase Order No: PAID IN FULL

The samples were analyzed as follows:

D.J. Northington, Ph.D.
Quality Assurance Officer

Charles Jacks, Ph.D.
Senior Staff Chemist

9840 Alburtis Avenue • Santa Fe Springs, CA 90670 • 562•948•2225 • FAX 562•948•5850 • http://www.wcaslab.com

WEST COAST ANALYTICAL SERVICE, INC.

Fred R Rippy, Inc
Attn: Fred Rippy

Job No: 45101
January 13, 2000

LABORATORY REPORT

CCR (17) Metals
Quantitative Analysis Report
Inductively Coupled Plasma - Mass Spectrometry
Total Metals Concentration - Parts Per Million

Sample ID: Glass

* May Exceed STLC Limits

		Sample mg/kg		Detection Limit		10 X STLC Limits mg/kg	TTLC Limits mg/kg
Antimony		1.65		0.01		150	500
Arsenic		1.54		0.6		50	500
Barium		60		0.01		1000	10000
Beryllium		0.05		0.01		8	75
Cadmium		99	*	0.01		10	100
Chromium	(total)	78	*	0.2	(Cr VI)	50	500
					(Cr III)	5600	2500
Cobalt		8.4		0.01		800	8000
Copper		380	*	0.09		250	2500
Lead		197	*	0.01		50	1000
Mercury		0.16		0.01		2	20
Molybdenum		6.8		0.01		3500	3500
Nickel		380	*	0.01		200	2000
Selenium		0.17		0.1		10	100
Silver		3.4		0.01		50	500
Thallium		0.02		0.01		70	700
Vanadium		7		2		240	2400
Zinc		1490		0.1		2500	5000

(1) Chromium is reported above as total chromium in sample.
(2) 10 X STLC Limits are used for comparison due to the 1/10 dilution of the sample during leachate preparation.

Date Analyzed: 1-11-00

WCAS

WEST COAST ANALYTICAL SERVICE, INC.

Fred R Rippy, Inc
Attn: Fred Rippy

Job No: 45101
January 13, 2000

LABORATORY REPORT

CCR (17) Metals
Quantitative Analysis Report
Inductively Coupled Plasma - Mass Spectrometry
Total Metals Concentration - Parts Per Million

Sample ID: Sand

	Sample (Average) mg/kg	Detection Limit		10 X STLC Limits mg/kg	TTLC Limits mg/kg
Antimony	0.17	0.01		150	500
Arsenic	ND	0.6		50	500
Barium	5.5	0.01		1000	10000
Beryllium	0.06	0.01		8	75
Cadmium	1.5	0.01		10	100
Chromium (total)	29.6	0.2	(Cr VI)	50	500
			(Cr III)	5600	2500
Cobalt	2.35	0.01		800	8000
Copper	25.5	0.09		250	2500
Lead	12.9	0.01		50	1000
Mercury	0.03	0.01		2	20
Molybdenum	3.49	0.01		3500	3500
Nickel	12.6	0.01		200	2000
Selenium	ND	0.1		10	100
Silver	2.7	0.01		50	500
Thallium	0.02	0.01		70	700
Vanadium	3	2		240	2400
Zinc	73.5	0.1		2500	5000

(1) Chromium is reported above as total chromium in sample.
(2) 10 X STLC Limits are used for comparison due to the 1/10 dilution of the sample during leachate preparation.

Date Analyzed: 1-11-00

WCAS

WEST COAST ANALYTICAL SERVICE, INC.

Fred R Rippy, Inc
Attn: Fred Rippy

Job No: 45101
January 13, 2000

LABORATORY REPORT

Quality Control Summary

Sample: Sand

Parts per Million (mg/kg)

	Sample	Duplicate	Avg	%RPD	Spike Conc.	MS	MS %Rec
Antimony	0.23	0.1	0.165		10	10.3	101
Arsenic	ND	ND	ND		10	10.6	106
Barium	4.7	6.3	5.5	29.1	10	15.9	104
Beryllium	0.06	0.06	0.06		10	10.2	101
Cadmium	1.5	1.4	1.45	6.9	10	12	106
Chromium	23.1	36	29.6	43.7	10	39	NR
Cobalt	2.39	2.3	2.35	3.8	10	12.3	100
Copper	23.1	27.8	25.5	18.5	10	82	NR
Lead	14.8	10.9	12.85	30.4	10	20.8	80
Mercury	0.03	0.02	0.025		1	0.89	87
Molybdenum	3.07	3.9	3.49	23.8	10	15.1	116
Nickel	11.3	13.9	12.6	20.6	10	20.2	76
Selenium	ND	ND	ND		100	96	96
Silver	4.2	1.27	2.74	107	10	10.8	81
Thallium	0.01	0.02	0.015		10	7.1	71
Vanadium	2.94	3.06	3		10	13.5	105
Zinc	55	92	73.5	50.3	10	72	NR

Date Analyzed: 1-11-00

NR - Not reported; sample result exceeds spike concentration.

Note: %RPD is higher than expected for some elements; probable sample nonhomogeneity.

WCAS

WEST COAST ANALYTICAL SERVICE, INC.

Fred R Rippy, Inc
Attn: Fred Rippy

Job No: 45101
January 13, 2000

LABORATORY REPORT

Quality Control Summary

Sample: Laboratory Fortified Blank (LFB)

Parts Per Million (mg/L)

	Blank Result	Spike Conc.	LFB Result	% Recovery
Antimony	ND	0.1	0.107	107
Arsenic	ND	0.1	0.103	103
Barium	ND	0.1	0.098	98
Beryllium	ND	0.1	0.1	100
Cadmium	ND	0.1	0.104	104
Chromium	ND	0.1	0.103	103
Cobalt	ND	0.1	0.102	102
Copper	ND	0.1	0.102	102
Lead	ND	0.1	0.103	103
Mercury	ND	0.01	0.0094	94
Molybdenum	ND	0.1	0.105	105
Nickel	ND	0.1	0.102	102
Selenium	ND	1	1.01	101
Silver	ND	0.1	0.104	104
Thallium	ND	0.1	0.094	94
Vanadium	ND	0.1	0.103	103
Zinc	ND	0.1	0.098	98

Date Analyzed: 1-11-00

Client: FRED R RIPPY, INC.
Job Number: 45486

Selected Metals in STLC Leachate
Quantitative Analysis Report
Inductively Coupled Plasma - Mass Spectrometry

Leachate Metals Concentration - Parts Per Million (mg/L)

	Glass mg/L		Detection Limit		STLC Limits mg/L
Cadmium	8.9	****	0.001		1
Chromium (total)	2		0.2	(Cr VI)	5
				(Cr III)	560
Copper	1.01		0.006		25
Lead	14.9	****	0.003		5
Nickel	4.5		0.06		20

Date Analyzed: 2-10-00

(1) Chromium is reported above as total chromium in sample.
(2) **** Exceeds STLC Limits.

Mr Reid,
Here is the STLC test results you requested on the Glass Bead

FRED R. RIPPY, INC.
Telephone: (562) 698-9801
Fax: (562) 945-1892
PRECISION STAMPINGS FOR THE ELECTRICAL INDUSTRY

Quality Control Summary

Sample: Glass
Matrix: STLC Leachate

Parts Per Million (mg/L)

	Sample	Spike Conc.	MS Result	MS %Rec	MSD Result	MSD %Rec	Spike %RPD
Cadmium	8.9	10	18.2	93	18.4	95	1.1
Chromium	2	10	11.6	96	11.6	96	0.0
Copper	1.01	10	10.2	92	10.1	91	1.0
Lead	14.9	10	28.4	135	25.7	108	10.0
Nickel	4.5	10	13.9	94	13.8	93	0.7

Sample: Laboratory Fortified Blank (LFB)

	Blank Result	Spike Conc.	LFB Result	% Recovery
Cadmium	ND	0.1	0.094	94
Chromium	ND	0.1	0.097	97
Copper	ND	0.1	0.091	91
Lead	ND	0.1	0.101	101
Nickel	ND	0.1	0.095	95

Date Analyzed: 2-10-00